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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/510,421	05/17/2005	Mario Magaldi	IPS-103	6309

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EXAMINER

RINEHART, KENNETH

ART UNIT PAPER NUMBER

3749

DATE MAILED: 12/18/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/510,421

Applicant(s)

MAGALDI, MARIO

Examiner

Kenneth B. Rinehart

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 17 May 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-18 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-11 and 16-18 is/are rejected.
- 7) ☒ Claim(s) 13-15 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 06 October 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Objections

Claim 9 is objected to under 37 CFR 1.75(c) as being in improper form because a multiple dependent claim must refer back to another dependent claim in the alternative. See MPEP § 608.01(n). Accordingly, in order to expedite prosecution it was assumed that claim 9 depended from claim 7.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1-7, and 9, 10 are rejected under 35 U.S.C. 102(b) as being anticipated by Magaldi (WO 97/00406). Magaldi shows A conveyor/cooler of solid hot loose materials generated by boilers and by various industrial processes, mainly comprising a sealed metal container connected to a boiler or an incinerator (12, 16, fig. 1), wherein a metal conveyor belt (14, fig. 1) is placed whereon the hot loose material is collected, which thanks to the gravitational effect leaves the combustion chamber (20, fig. 1), by forming a traveling continuous bed of material whose cooling is carried out through the joint feeding of atomized water jets (page 10, lines 12-13) and air flows (fig. 1), in that the conveyor belt consists of a regenerative heat exchanger which absorbs the heat from the material during the forward run towards the unloading area and it gives it up to the air in the return run (col. 8, line 11), device can be installed underneath the boilers or incinerators wherein the combustion occurs either

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under vacuum or pressure with respect to the outer atmosphere (fig. 1, fig. 2, col. 4, lines 14-18), that the device allows the recovery of thermal energy taken from the hot material when it operates under vacuum; said recovery takes place by introducing the heated air with the heat given up by the material into the chamber of combustion of the boiler by thus mixing it to the main combustion air (claim 6), in that the intake air capacity into the metal container from the air intakes can be adjusted in order to optimize the cooling (page 8, lines 5-7), that a scraping conveyor with chains or with a metal net is provided in order to scrape the material's dust from the bottom of the container, wherein is deposited and is conveyed towards the unloading area (30, fig. 1), in that in order to increase the cooling of the hot loose material coming from the combustion chamber an atomized water sprinkling system composed by a set number of nozzles is used (page 10, lines 12-13), the capacity of the nozzles, the intervention sequence and the duration of the activation are defined according to the temperature of the material and according to the level of the capacity of the same material, inside the metal container some temperature sensors are installed whose signals are used in order to adjust the operation of the atomized water sprinkling system. (col. 10, lines 13-19, the temperature of the plate is representative of the temperature of the material.)

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claim 8 is rejected under 35 U.S.C. 103(a) as being unpatentable over Magaldi discloses A conveyor/cooler of solid hot loose materials generated by boilers and by various industrial processes, mainly comprising a sealed metal container connected to a boiler or an incinerator (12, 16, fig. 1), wherein a metal conveyor belt (14, fig. 1) is placed whereon the hot loose material is collected, which thanks to the gravitational effect leaves the combustion chamber (20, fig. 1), by forming a traveling continuous bed of material whose cooling is carried out through the joint feeding of atomized water jets (page 10, lines 12-13) and air flows (fig. 1), in that the conveyor belt consists of a regenerative heat exchanger which absorbs the heat from the material during the forward run towards the unloading area and it gives it up to the air in the return run (col. 8, line 11), device can be installed underneath the boilers or incinerators wherein the combustion occurs either under vacuum or pressure with respect to the outer atmosphere (fig. 1, fig. 2, col. 4, lines 14-18), that the device allows the recovery of thermal energy taken from the hot material when it operates under vacuum; said recovery takes place by introducing the heated air with the heat given up by the material into the chamber of combustion of the boiler by thus mixing it to the main combustion air (claim 6), in that the intake air capacity into the metal container from the air intakes can be adjusted in order to optimize the cooling (page 8, lines 5-7),

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that a scraping conveyor with chains or with a metal net is provided in order to scrape the material's dust from the bottom of the container, wherein is deposited and is conveyed towards the unloading area (30, fig. 1), in that in order to increase the cooling of the hot loose material coming from the combustion chamber an atomized water sprinkling system composed by a set number of nozzles is used (page 10, lines 12-13), the capacity of the nozzles, the intervention sequence and the duration of the activation are defined according to the temperature of the material and according to the level of the capacity of the same material, inside the metal container some temperature sensors are installed whose signals are used in order to adjust the operation of the atomized water sprinkling system. (col. 10, lines 13-19, the temperature of the plate is representative of the temperature of the material.). Magaldi discloses applicant's invention substantially as claimed with the exception of the number of nozzles therein, their piano-volumetric arrangement inside of the metal container and the type of each single nozzle, are preset according to the chemical-physical characteristics of the conveyed material, according to the capacity of the same material and according to the desired cooling degree. It would have been obvious to one of ordinary skill in the art at the time the invention was made to have nozzles of a certain type, number, and location, since discovering optimum values for a material involves only routine skill in the art.

Claim 11 is rejected under 35 U.S.C. 103(a) as being unpatentable over Magaldi as applied to claim 8 above, and further in view of (FR 2731064). Magaldi discloses applicant's invention substantially as claimed with the exception of the spraying angle of the nozzles must be such to cover the entire surface of the traveling bed formed by the hot material. FR 2731064 teaches the spraying angle of the nozzles must be such to cover the entire surface of the traveling

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bed formed by the hot material (fig. 3) for the purpose of more effectively cooling the material. It would have been obvious to one of ordinary skill in the art to modify Magaldi by including the spraying angle of the nozzles must be such to cover the entire surface of the traveling bed formed by the hot material as taught by FR 2731064) for the purpose of more effectively cooling the material to provide for a more effective apparatus that can process material in a faster manner.

Claims 16-18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Magaldi in view of (EP0931981) discloses A conveyor/cooler of solid hot loose materials generated by boilers and by various industrial processes, mainly comprising a sealed metal container connected to a boiler or an incinerator (12, 16, fig. 1), wherein a metal conveyor belt (14, fig. 1) is placed whereon the hot loose material is collected, which thanks to the gravitational effect leaves the combustion chamber (20, fig. 1), by forming a traveling continuous bed of material whose cooling is carried out through the joint feeding of atomized water jets (page 10, lines 12-13) and air flows (fig. 1), in that the conveyor belt consists of a regenerative heat exchanger which absorbs the heat from the material during the forward run towards the unloading area and it gives it up to the air in the return run (col. 8, line 11), device can be installed underneath the boilers or incinerators wherein the combustion occurs either under vacuum or pressure with respect to the outer atmosphere (fig. 1, fig. 2, col. 4, lines 14-18), that the device allows the recovery of thermal energy taken from the hot material when it operates under vacuum; said recovery takes place by introducing the heated air with the heat given up by the material into the chamber of combustion of the boiler by thus mixing it to the main combustion air (claim 6), in that the intake air capacity into the metal container from the air intakes can be adjusted in order to optimize the cooling (page 8, lines 5-7), that a scraping conveyor with chains or with a

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metal net is provided in order to scrape the material's dust from the bottom of the container, wherein is deposited and is conveyed towards the unloading area (30, fig. 1), in that in order to increase the cooling of the hot loose material coming from the combustion chamber an atomized water sprinkling system composed by a set number of nozzles is used (page 10, lines 12-13), the capacity of the nozzles, the intervention sequence and the duration of the activation are defined according to the temperature of the material and according to the level of the capacity of the same material, inside the metal container some temperature sensors are installed whose signals are used in order to adjust the operation of the atomized water sprinkling system. (col. 10, lines 13-19, the temperature of the plate is representative of the temperature of the material.). Magaldi discloses applicant's invention substantially as claimed with the exception of the plates of the metal conveyor belt can be equipped with appropriate slots in order to allow the passage of the cooling air flow through the whole layer of the continuous bed formed by the hot loose material traveling above said metal belt, the geometry, the number and the arrangement of the slots made in the plates of the metal conveyor belt must be defined as a function of the type, the amount and mainly with respect to the grain size of the conveyed material so as to avoid that this latter would leak and fall to the bottom of the metal container that it is possible to adjust the fraction of the cooling air flow which runs through the slots made on the plates of the metal belt, with respect to the specific cooling needs and to the possible presence of unburnt matter. Magaldi (EP931981) teaches the plates of the metal conveyor belt can be equipped with appropriate slots in order to allow the passage of the cooling air flow through the whole layer of the continuous bed formed by the hot loose material traveling above said metal belt, the geometry, the number and the arrangement of the slots made in the plates of the metal conveyor belt must be defined as

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a function of the type, the amount and mainly with respect to the grain size of the conveyed material so as to avoid that this latter would leak and fall to the bottom of the metal container that it is possible to adjust the fraction of the cooling air flow which runs through the slots made on the plates of the metal belt, with respect to the specific cooling needs and to the possible presence of unburnt matter (col. 3, lines 45-60, col. 4, lines 1-20) for the purpose of obtaining desired thermal behavior. It would have been obvious to one of ordinary skill in the art to modify Magaldi by including the plates of the metal conveyor belt can be equipped with appropriate slots in order to allow the passage of the cooling air flow through the whole layer of the continuous bed formed by the hot loose material traveling above said metal belt, the geometry, the number and the arrangement of the slots made in the plates of the metal conveyor belt must be defined as a function of the type, the amount and mainly with respect to the grain size of the conveyed material so as to avoid that this latter would leak and fall to the bottom of the metal container that it is possible to adjust the fraction of the cooling air flow which runs through the slots made on the plates of the metal belt, with respect to the specific cooling needs and to the possible presence of unburnt matter as taught by Magaldi for the purpose of obtaining desired thermal behavior so the apparatus will operate more efficiently.

Allowable Subject Matter

Claims 12-15 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.


Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Kenneth B. Rinehart whose telephone number is 571-272-4881. The examiner can normally be reached on 7:20 -4:20.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Josiah Cocks can be reached on 571-272-4874. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

kbr


KENNETH RINEHART
PRIMARY EXAMINER